

## **REMARKS**

### **Status of the Claims.**

Claims 1-50 are pending with entry of this amendment, claims 51-97 being cancelled and no claims being added herein. Claims 1, 14, 27, and 40 are amended herein. These amendments introduce no new matter. Support is replete throughout the specification, for example, in the claims as originally filed, in the formulas provided in Table 1, at pages 36-38, lines 6-9 of paragraph 0067, and the like.

### **Election/Restriction.**

Pursuant to a restriction requirement made final, Applicants cancel claims 51-97 with entry of this amendment. Please note, however, that Applicants reserve the right to file subsequent applications claiming the canceled subject matter and the claim cancellations should not be construed as abandonment or agreement with the Examiner's position in the Office Action.

### **Information Disclosure Statement.**

Applicants note with appreciation the Examiner's thorough consideration of the references cited in the Information Disclosure Statement (Form 1449).

### **Drawings.**

The drawings were objected to by the draftsman as detailed in Form PTO-948 provided with the Office Action. Applicants note that drawings 1, and 5-7b were objected to.

Replacement drawings 1, and 4-7b are provided herewith thereby obviating this objection.

### **Claim objections.**

Claims 1 and 27 were objected to as lacking clarity. Claims 1 and 27 are amended consistent with the Examiner's recommendation (adding commas as indicated) thereby obviating this objection.

Claims 14 and 40 were objected to because of the reference to Table 1. Claims 14 and 40 are amended herein to expressly recite the formulas provided in Table 1 thereby obviating this objection.

**35 U.S.C. §112, Second Paragraph.**

Claims 27-50 were rejected under 35 U.S.C. §112, second paragraph, as indefinite because it was allegedly unclear whether the "and the polymerization of the redox-active molecules clause is included as part of the 'and/or' (i.e., is optional), or is in addition to the 'and/or' (i.e., is required).

Claim 27 is amended herein to clarify that the polymerization is required thereby obviating this rejection.

**Obviousness-Type Double Patenting.**

Claims 1-50 were rejected under the judicially created doctrine of obviousness-type double patenting in light of claims 1-22 of U.S. Patent NO: 7,005,237 (the '237 patent). Applicants traverse.

The present invention is directed to methods of creating **polymers of redox active molecules** attached to a surface. The redox-active molecules attached to the linker via a first reactive site (or are provided pre-attached to a linker that is attached to the substrate) and then subsequent redox-active molecules react via a first reaction site to the attached redox-active molecule thereby forming attached polymers of redox-active molecules.

Thus, for example, the present specification states:

[0067] In certain embodiments, the polymerization of redox-active molecules to form polymers and their attachment to a surface is performed in a "single step" polymerization. In this approach, **redox-active molecules are provided that bear two available reactive sites or groups** (the same or different). The molecules (provided dry or in a solvent) are contacted to each other and to the substrate surface at an elevated temperature (e.g. at least about 200°C, preferably at least about 300°C, and more preferably at least about 400°C) **whereby the reactive sites or groups react with each other and/or the substrate or a site or reactive group on the substrate resulting in attachment of the molecules to each other (thereby forming polymers)** and to the substrate (*see, e.g.,* Figure Error! Reference source not found.). (paragraph 0067, page 16)

In contrast, the '237 patent teaches the use of charge storage molecules (CSMs) that have functional groups **that do not react with each other**. Consequently the CSMs do not polymerize and it is noted, for example, that the structure shown in Figure 2 of the '237 patent includes **a single**

CSM, while, in contrast, the structures shown in the Formulas of the presently pending application show **polymers of redox-active molecules ( $M_n$ )**.

Accordingly, claims 1-22 of the '237 patent fail to teach or suggest the presently claimed invention and the obviousness-type double patenting rejection should be withdrawn.

**35 U.S.C. §102.**

Claims 1-50 were rejected under 35 U.S.C. §102e) as allegedly anticipated by Lindsey (U.S. Patent 7,005,237). As explained above, the presently claimed methods pertain to the polymerization of redox-active molecules to form polymerized redox-active molecules attached to a substrate. In certain embodiments this is facilitated by providing redox-active molecules having two reactive sites that are reactive with each other. The molecules can then be coupled to a surface (*e.g.*, via a first reactive site and other redox-active molecules couple to the attached redox-active molecule (*i.e.*, via reaction of the first reactive site with the second reactive site).

To clarify this claims 1 and 27 are amended herein to recite that the "first reactive site or group is a species reactive with said second reactive site or group" as taught, for example in paragraph 0067.

In contrast, the '237 patent teaches the use of charge storage molecules (CSMs) that have functional groups **that do not react with each other and thus, do not polymerize**. The '237 patent fails to disclose the presently claimed invention. Accordingly, the rejection under 35 U.S.C. §102(e) should be withdrawn.

In view of the foregoing, Applicants believe all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. Should the Examiner seek to maintain the rejections, Applicants request a telephone interview with the Examiner and the Examiner's supervisor.

If a telephone conference would expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (510) 267-4161.

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Respectfully submitted,  
  
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